ESO #1984

1993 AGRICULTURAL OUTLOOK

INTERNATIONAL TRADE, PRODUCTION INPUTS, AND ETHANOL UPDATE

A Discussion Guide

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November 1992

SLIDE 1: INTERNATIONAL TRADE, PRODUCTION INPUTS AND ETHANOL UPDATE

1. This is an introductory outline slide of the four principle discussion topics: trends in U.S. agricultural trade; factors affecting future trade; production inputs; and ethanol update. The topics may be presented in the order given or can be reordered to fit a particular presentation need. Topics one and two logically fit together. Topics three and four can be presented in any order and used as stand alone presentations for specific situations.

2. In my presentation, and in the format detailed below, I make minor adaptations to this outline. Production inputs, topic 3, is presented first. Projected prices for fuel, seed, fertilizer, chemicals, labor, and land are discussed under this topic. Also, since fuel prices are a component of input costs, the sub-topic 'energy availability and cost' (topic 2) is discussed here.

3. Trends in U.S. agricultural trade (topic 1) are treated next with a focus on total exports, the division of exports among commodity groups, and an identification of major importing countries and regions. Factors responsible for the trends that started in the 1980s and continue until today are high-lighted.

4. A number of factors that affect the pattern of trade today and will continue to influence trade significantly in the future are discussed next in some detail (topic 2). These factors include economic growth in world markets and regional trade agreements with a particular focus on the changes in U.S. trade with Canada and Mexico, our new partners in the North American Free Trade Agreement (NAFTA), including a detailed discussion of the NAFTA agreement.

5. The final section is a short update on the impacts of the 1990 Clean Air Act on the market for ethanol, including recent administration initiatives that further favor the incorporation of ethanol in the U.S. automotive fuel market.

6. The presentation begins with a discussion of projected prices for production inputs.

SLIDE 2: INPUT COST CHANGES

1. This is the first of two buildup slides on input price projections for the 1992 agricultural year. This slide has projections for inflation (CPI), all production expenses, and fuel costs for 1993. Inflation is expected to continue in the 3% range for next year. All production expenses will average a 2% increase, while fuel prices will increase about 4% over 1992 prices.

SLIDE 3: WORLD CRUDE OIL PRICES

1. I am breaking the buildup slide sequence on input costs at this point to bring in an explanation of the reasons behind the projected increase in fuel costs - increases that are slightly greater than the CPI. The horizontal scale on slide three has been expanded to provide quarterly data for the years 1990, 1991, and 1992 to better illustrate the dynamic nature of energy (oil) markets during and after the Mid-East war.

2. On a quarterly basis, crude oil prices went from a low of $15 per barrel in the second quarter of 1990 to a high of over $30 per barrel in the third quarter of the same year. This period corresponds to immediately before and after Iraq invaded Kuwait. It is interesting to note that following the war, the price of crude oil returned to the level of prices in 1989, rose steadily to near $20 per barrel in the fourth quarter of 1991, and has been in this narrow trading range during 1992.

3. The slow gradual rise in international oil prices is expected to continue, especially if significant economic growth occurs around the world. A sharp rebound in world economic activity, would propel energy prices higher at a faster rate, since world surplus production capacity is not sufficiently large to accommodate a sharp upward move in demand.

SLIDE 4: INPUT COST CHANGES

1. This is the second of the build-up slides on input cost changes for 1993. Seed, fertilizer, and chemical costs are expected to remain near 1992 levels.

2. Labor cost increases in 1993 are expected to rise 2%, while land prices and land rents are expected to show little or no change.

SLIDE 5: U.S. AGRICULTURAL EXPORTS

1. Over the past fifteen years exports have been on a roller coaster ride reversing direction every five years. A sharp upturn in the late 1970s was followed by an equally sharp downturn from 1980 to 1985. The last half of the 1980s witnessed a recovery to a level of about $40 billion annually, almost to the 1980 level. In 1990/91 exports fell to $37.5 billion, but rebounded to $41.5 billion in 1992. Projections are for the same or slightly lower export value in 1992/93.

2. Economic forces have driven these sharp swings in export values. In the late 1970s, petro dollars, low interest rates, and economic growth fueled an unprecedented demand for U.S. farm exports at high prices. In the early 1980s, world recession, high interest rates, mounting debt, and rising world food production all contributed to lower world prices and the decline in U.S export value. The recovery after 1985, was not uniform across all countries and regions, as some combination of high debt, low growth rates, or increased agricultural production in some regions limited export potential, while high growth rates in other regions led to sharply higher imports of U.S. farm products.

SLIDE 6-8: U.S.AGRICULTURAL EXPORTS BY COMMODITY GROUP, 1975/76 - 1991/92

1. In these slides, market share (percent of total exports) for each commodity group is shown. The trends are very clear. Grains and soybeans and soybean products (commonly called bulk commodities) were the principal export items fifteen years ago. Their share of exports has declined steadily over the years, being replaced by increasing export values of livestock and horticultural products (commonly called high value products). These changes are especially pronounced in the last five years.

2. There are many reasons for these changes. Lowering of tariff and other non-tariff barriers, inability to produce livestock under the resource conditions in the importing country, and a better job of marketing by U.S. export companies have all contributed to the growth in high value exports. Since high value products employ more U.S resources per unit of bulk commodity, this is a positive change.

SLIDE 9: U.S. AGRICULTURAL EXPORTS BY WORLD REGION, 1975/76 - 1991/92

1. While the decline in the Western European market and the rise in the Asian market are more pronounced in recent years, the shift in market shares has been underway for some time. With about equal shares of 30-35 percent in the mid 1970s, Asian markets had grown to absorb almost one-half of all U.S. farm exports by the late 1980s. Over the same time frame, Western European markets declined to less than 20 percent of U.S. agricultural exports. Low debt levels, rapid economic development,and a small agricultural base are characteristic of many Asian growth markets. In Europe, mature, high income economies with little or no growth in food demand are becoming more than adequately supplied by a farm sector with increasing agricultural productivity and strong subsidy support.

2. The minor reversals noted in the above trends for the past two years reflect the impact of recession on the buying power for low and middle income populations (Asia), and the lesser impact on food buying habits in high income countries. As the world recession moderates we expect the regional trend favoring Asia as the strong growth market to continue.

3. Latin America has been a steady but small market, hampered by high debt and low economic growth during the 1980s. Recent emphasis on market economies and progress on regional trade agreements should add additional strength to the modest export growth noted in the last three years.

4. Africa is a small market where about one-half of U.S. exports are subsidized to some extent. It holds little promise as a significant market.

5. The former USSR and Eastern Europe have been a weather driven market fluctuating between five and twelve percent of U.S. exports annually. This year, with little foreign exchange and a deteriorating economy, exports were made on a credit guarantee or grant basis and fell in the middle to low range in comparison with recent years. This is a very uncertain market. Concessionary sales are required to maintain export volume.

SLIDE 10: MAJOR U.S. EXPORT MARKETS - 1991/92

1. The principle point here is that while Asia is clearly our major market, within Asia, a few countries with limited population levels account for most of this trade. For example, Japan takes more trade (20%) than all of Western Europe (18%). Three countries, Japan, South Korea, and Taiwan account for one-third of U.S. farm exports, yet with a combined population of less than 200 hundred million people, represent only six percent of the people in Asia. The lesson is clear - as economic development proceeds in some of the larger poor countries of Asia significantly greater markets will open up there.

SLIDE 11: MAJOR U.S. EXPORT MARKETS - 1991/92

1. This slide rank orders the five largest country markets for U.S. farm exports in 1991/92. The top five countries take 52% of our exports.

SLIDE 12: OHIO FARM EXPORTS - 1990/91

1. Ohio exports about $1 billion of farm products annually. This is 3% of U.S. exports and ranks Ohio 10th among U.S. states. Soybeans and feedgrains each account for one third of Ohio's farm exports.

SLIDE 13: WORLD ECONOMIC GROWTH

1. Budget deficits in industrialized countries continue to hamper recovery. Many countries (including the U.S.) are powerless to use fiscal policy to support economic recovery. In addition, large budget deficits are holding long term interest rates high, thereby diluting the impact of short term interest rate cuts. Following anemic real growth rates of 0.6 and 1.7 percent, industrialized countries are expected to grow at a 2.9 percent rate in 1993.

2. The former centrally planned economies are finding the transition to market economies more troublesome than anticipated. As a group these countries had negative real growth rates of -9.7 and -16.8 percent in 1991 and 1992. IMF forecasts an improved but still negative rate of -4.5 percent in 1993 for these countries.

3. Developing countries present a much brighter situation. This is good news for U.S. agriculture since developing countries are the primary areas for agricultural trade growth. In 1991, they had the poorest growth performance in eight years, but still a respectable 3.2 percent real growth rate. This has almost doubled to 6.2 percent in 1992, the best performance in more than a decade and growth is expected to continue at this level in 1993.

4. Lower interest rates and a weaker dollar have helped by reducing debt service payments. Perhaps more important are the stabilization policies and structural reforms that many developing countries have pursued in recent years, as they shed state ownership of major industries and reduced over management of their economies. The turn around in Mexico and its participation in the North American Free Trade Agreement are clear evidence of the impact of these changes.

SLIDE 14: WORLD AND REGIONAL TRADE AGREEMENTS

1. I am including this slide to demonstrate the number of interim regional free trade agreements that are emerging and moving the world toward a more common market even though the GATT negotiations appear to be making only minor progress. The import is that we are rapidly becoming a world economy, and since we can't identify adequately with the world economy through GATT, a number of easier to broker regional agreements will appear as stepping stones to an overall agreement.

2. Two general regions are shown, and then only selected regional trade agreements within each. In the EC, a number of surrounding countries are eager to become affiliated with, and thus, enlarge the Common Market. In the Western Hemisphere, the Bush administration has called for hemispheric free trade under the umbrella of "Enterprise for the Americas Initiative." However, while this larger regional trade zone is under discussion a number of smaller efforts are already functioning or soon will be.

3. The U.S. Canada Free Trade Agreement (CFTA) is expanding under the North American Free Trade Agreement (NAFTA) to include Mexico. The Caribbean already has it's common market - CARICOM, as does Southern South America - MERCOSUR. We already have special trading rules for the Caribbean Basin Initiative (CBI).

4. Next we turn to a discussion of NAFTA.

Slide 15: NAFTA COUNTRY CHARACTERISTICS

1. All three countries have large geographic areas and share long common borders.

2. Population numbers and income levels are significantly different. The U.S. has nearly 10 times the population of Canada and almost three times that of Mexico.

3. Income per capita is nearly equal in Canada and the U.S. at nine times that in Mexico. Per capita food consumption levels reflect this income difference with the Mexican diet requiring only one-half the cereal equivalents of the U.S. and Canadian diets.

4. Arable land per capita favors the U.S. and Canada, and productivity levels favor the U.S. This represents technology, climate, and land quality differences.

SLIDE 16: NAFTA: NON-AGRICULTURAL CONDITIONS

1. It is significant that the discussion of a free trade agreement is between countries that already have few major obstacles to trade. The average U.S. tariff on imports of manufactured goods is only 4%, while for Mexico it is a little higher at 10%.

2. There are, however, significant differences between the U.S. and Mexico in size of the economy and in manufacturing wage rates. The U.S. economy at almost $5 trillion dwarfs (23 times larger) the Mexican economy at $209 billion.

3. It is interesting to note the intense political discussion and predictions of dire consequences of a NAFTA agreement for the U.S. when there are currently few trade barriers, and Mexico has such a small economy relative to the U.S.

SLIDE 17: U.S. - CANADA AGRICULTURAL TRADE

1. Both exports and imports increased substantially following enactment of the bi-lateral trade agreement with Canada. The most dramatic increase, however, was with exports, more than doubling in the past three years, and moving the U.S. from a negative to a positive agricultural trade balance with Canada.

SLIDE 18: U.S. - MEXICO AGRICULTURAL TRADE

1. As with Canada, the U.S. has moved to a positive agricultural trade balance with Mexico in the past four years, more than doubling exports since 1985. Agricultural imports from Mexico have increase marginally over this time period.

Slide 19: U.S. AGRICULTURAL EXPORTS TO MEXICO AND CANADA

1. This slide is used to show the sharp upward movement in U.S. exports to Canada following the CFTA as contrasted to a solid but less dramatic rise in exports to Mexico.

SLIDE 20: U.S. NORTH AMERICAN AGRICULTURAL TRADE MARKET, 1991/92

1. Canada to the north, and Mexico to the south are our second and third most important agricultural markets. Latitude differences determine the types of commodities produced and thus influence the type of products traded. The U.S. exports fruits and vegetables primarily to Canada. Canada in turn sends livestock and livestock products south. These commodity exchanges reflect comparative advantage in the production of the traded commodity.

2. Mexico, however has an advantage in vegetable and fruit production, primarily in the off-season and for tropical plants. The U.S. in turn is a more efficient producer of grains and livestock, the primary components of U.S exports to Mexico.

3. In both situations there are positive returns to trade.

SLIDE 21: PROJECTED CHANGES IN U.S. EXPORTS TO MEXICO - AFTER 15 YEARS - NAFTA VERSUS NO NAFTA

1. Grains, soybeans, and meat are the principle commodities that will show strong export growth as a result of NAFTA. Collectively, exports of these commodities should be over $1 billion higher after all elements of the agreement are complete. Corn and soybean exports will show the largest revenue growth, while meat products will show the largest percent increase.

SLIDE 22: 1990 CLEAN AIR ACT

1. In the Clean Air Act, new fuel specifications are mandated for areas that do not meet certain air quality levels. Among other options, two new fuel formulations are expected to have a major impact on the fuel market.

2. The first is oxygenated gasoline. Gasoline with a higher oxygen content produces less carbon monoxide (CO) emissions. Currently there are about 43 areas (usually major cities) that are not in compliance with the CO minimum levels. Starting in November of 1992, they will have to use oxygenated gasoline during the winter months, when CO problems are more severe. Ethanol, when mixed in a ten percent ratio with gasoline lowers CO emissions by about 25 percent.

3. The second new fuel is a reformulated fuel that will result in less emissions of substances (e.g., NO) that lead to the formation of ozone.

4. Reformulated gasoline use will be required in nine large metropolitan areas starting in 1995. These areas now account for one-fourth of all gasoline use. Also, other areas and whole states may opt to require use of this new reformulated fuel even if they are not required to do so under the Clean Air Act. Many are exercising this option, leading some to estimate that by 1995, reformulated gasoline may be required for up to one-half of all gasoline sold in the U.S.

5. The role ethanol may play in reformulated gasoline is uncertain since in some tests ethanol is associated with equal or higher levels of NO emissions and has higher volatility (evaporative emissions) than gasoline. For these reasons, EPA has ruled that ethanol does not meet the specifications for summer use in smog prone areas.

SLIDE 23: ETHANOL: ELECTION YEAR INITIATIVES

1. With strong political pressure from the ethanol lobby, the administration has initiated two actions supporting production and use of ethanol. The first will require gasoline refiners to provide low volatility gasoline (30% of the supply) to five of the nine metropolitan areas with smog problems. The other 4 areas may request up to 20% of low volatility gasoline for their use. This gasoline, when mixed with ethanol will meet the clean air standards.

2. The second initiative, from USDA, will set aside $10 million for ethanol research in the current fiscal year, and request an additional $90 million from congress for another four years.

3. These are both strong initiatives on behalf of the ethanol industry, but there are some potential problems in implementation. The oil and environmental lobbies have threatened a law suit against the 30% requirement for low volatility gasoline, and congress must concur with spending the research funds.

SLIDE 24: ETHANOL PRODUCTION AND CAPACITY

1. The number of ethanol distilleries with a significant production capacity is about 36. The stated combined production capacity of these plants is 1.16 billion gallons per year. At full capacity, this production utilizes 464 million bushels of corn annually. For most of 1992 the plants were running at full capacity.

2. Presently, there are 24 additional new plants or additions to existing plants in various stages of development. Construction on most of these new plants and additions will not proceed until a more definitive answer on ethanol's role in the Clean Air Act is determined. This new capacity could be on stream in about one year, raising capacity by 600 million gallons per year. This will raise corn demand by an additional 250-350 million bushels to a total of nearly 10 percent of the U.S. corn crop.

INTERNATIONAL TRADE, PRODUCTION INPUTS AND ETHANOL UPDATE

1. Trends in U.S. Agricultural Trade
   - Total Exports
   - Commodity Shares
   - Importing Countries, Regions

2. Factors Affecting Future Trade
   - Energy Availability and Cost
   - Economic Growth
   - NAFTA, GATT and Other Regional Trade Agreements

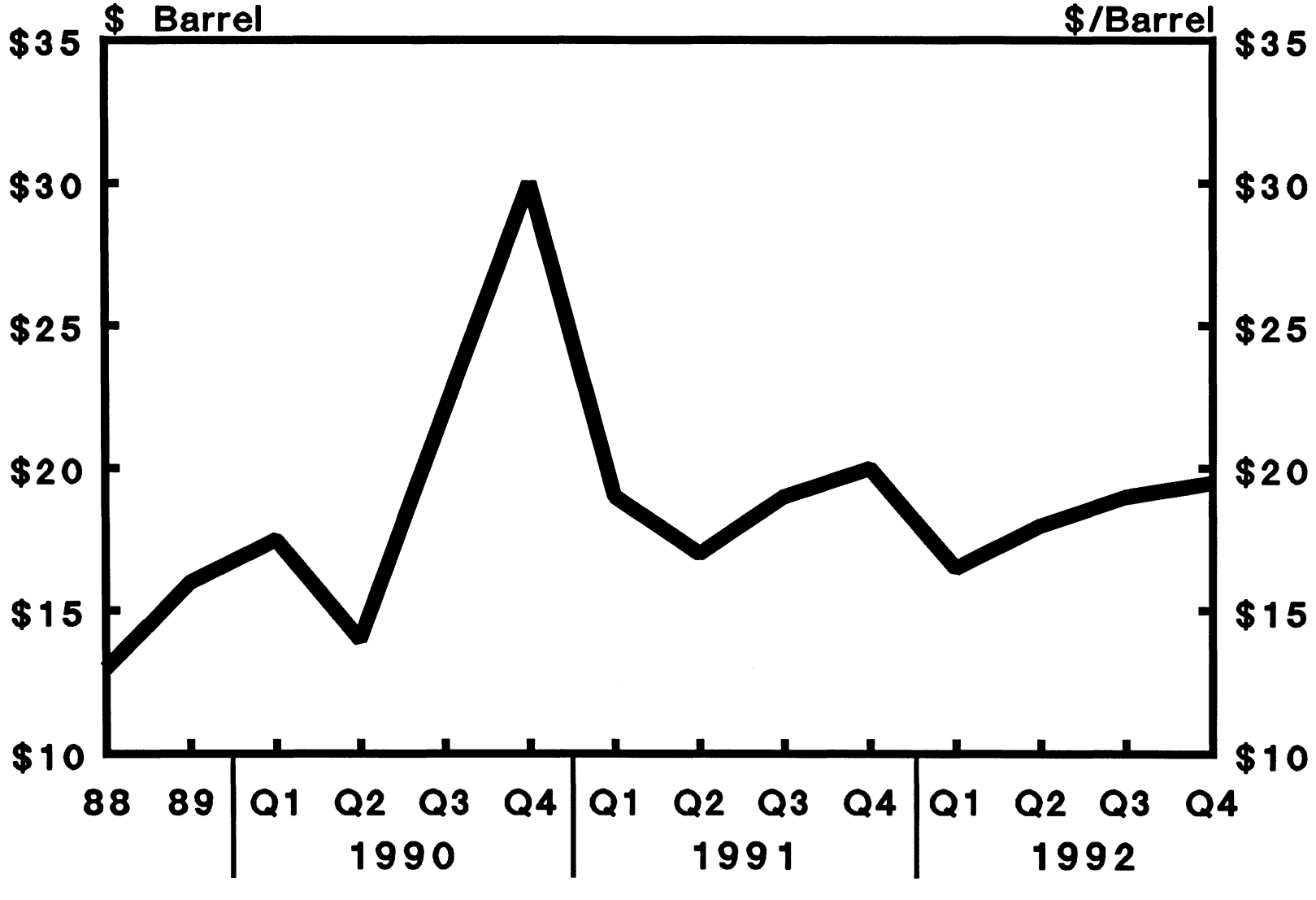
3. Production Inputs

4. Ethanol Up Date
   - Clean Air Act
   - New Policy Initiatives

INPUT COST CHANGES

CPI	Up	3%
All Expenses	Up	2%
Fuel	Up	4%
Labor	Up	2%

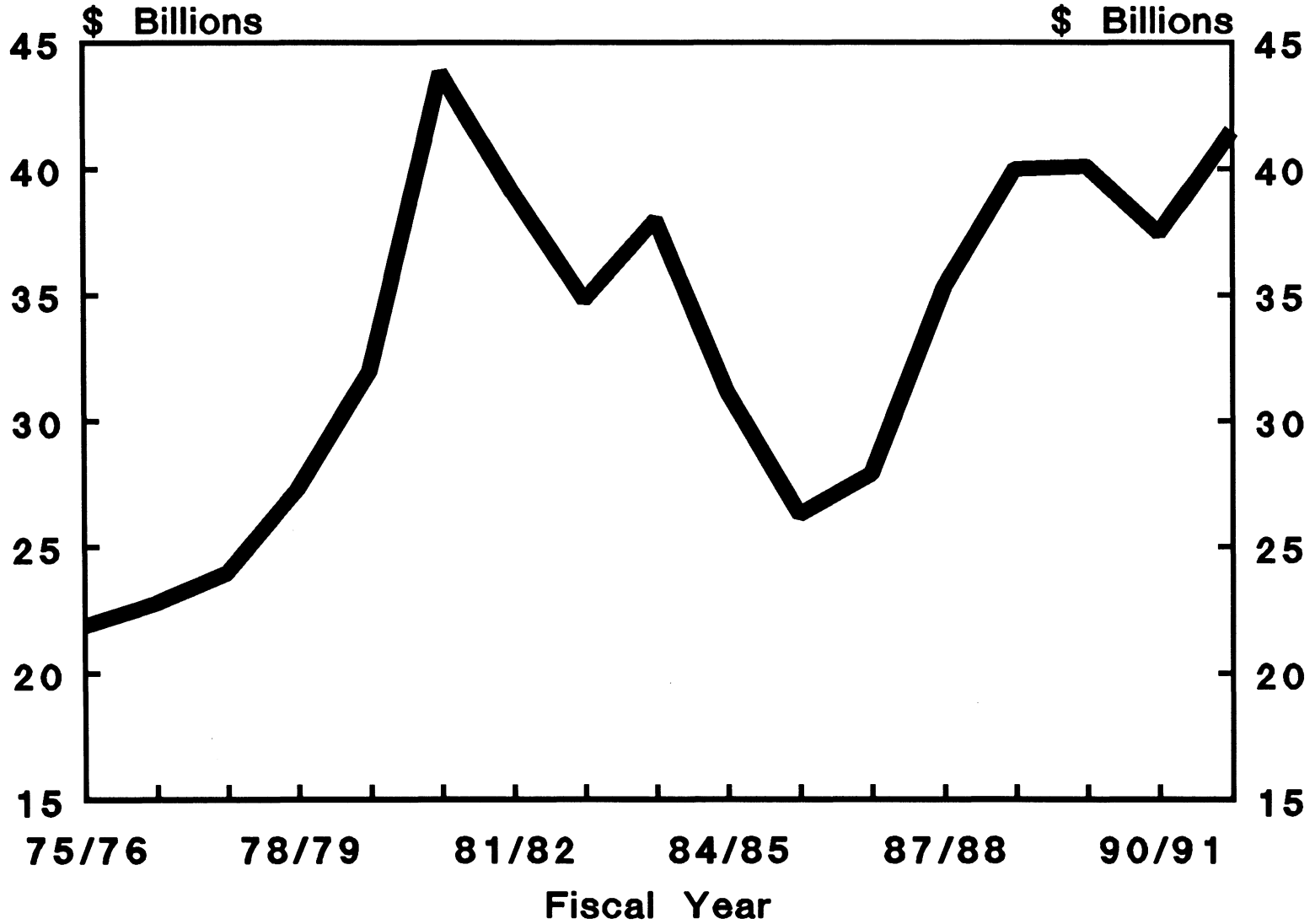
WORLD CRUDE OIL PRICE



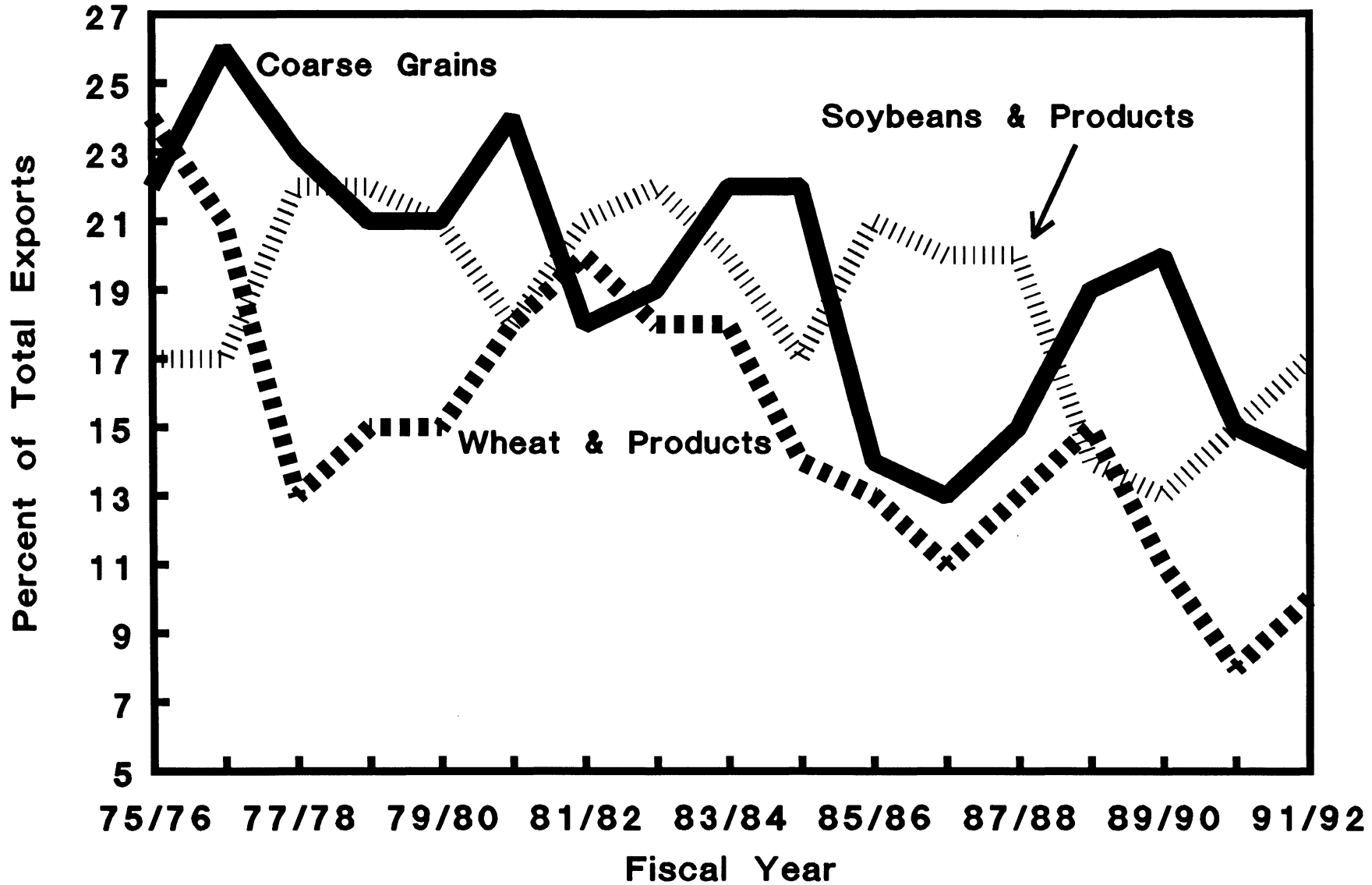
INPUT COST CHANGES

CPI	Up	3%
All Expenses	Up	2%
Fuel	Up	4%
Labor	Up	2%
Seed	No Change	-
Fertilizer	No Change	-
Chemicals	No Change	-
Land	No Change	-

U.S. AGRICULTURAL EXPORTS



U.S. AGRICULTURAL EXPORTS BY COMMODITY GROUP, 1975/76 - 1991/92



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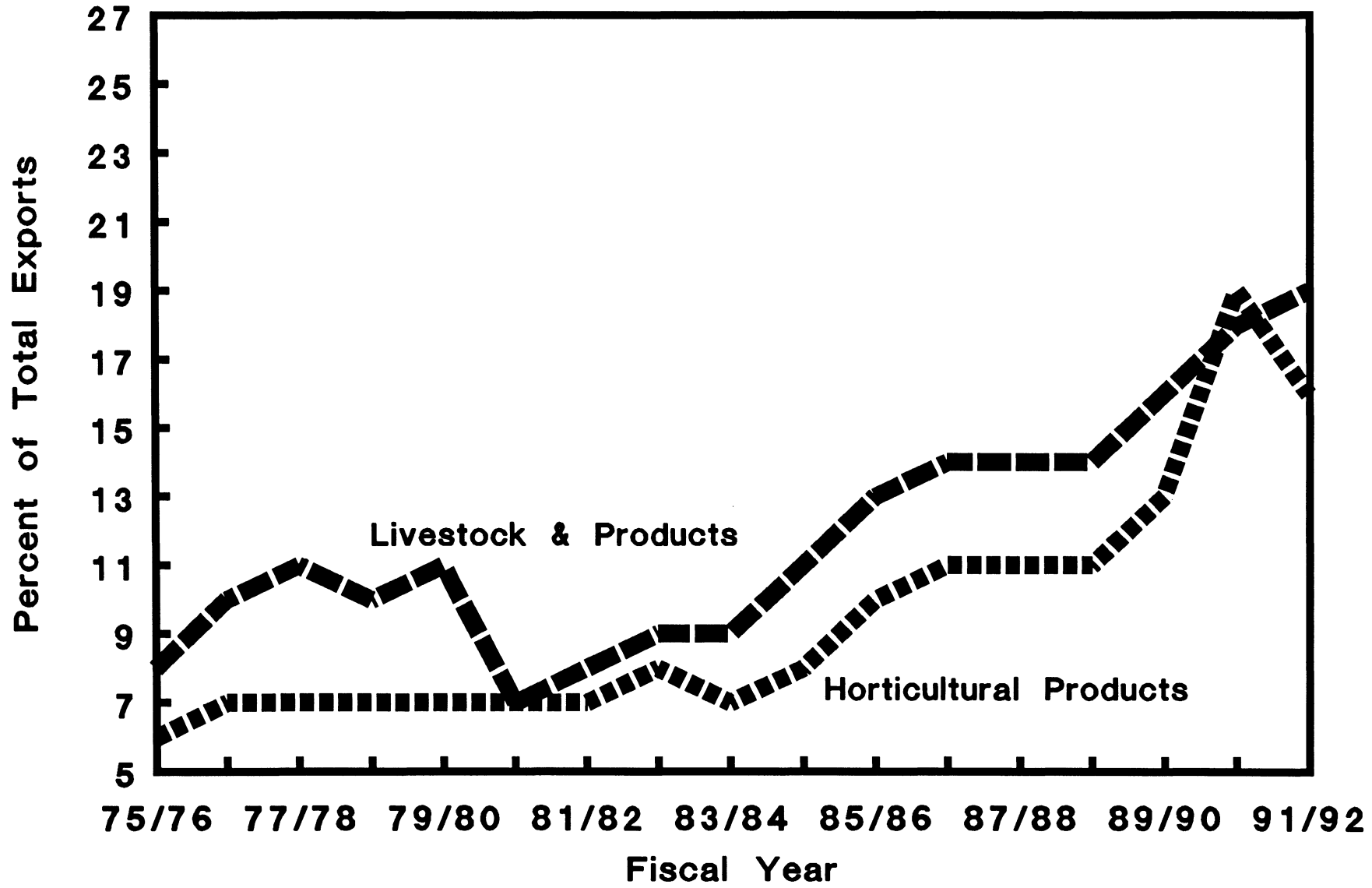

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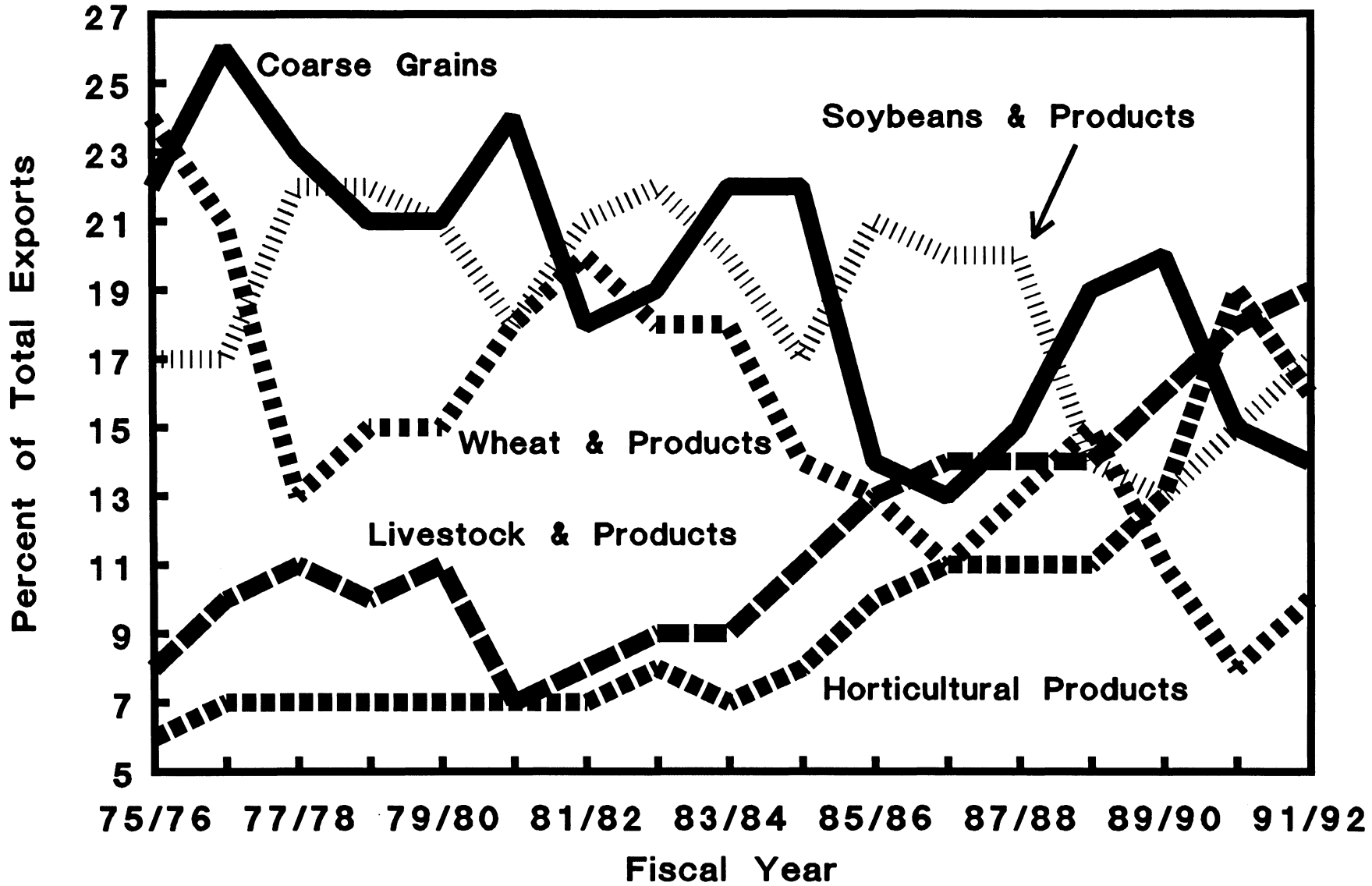
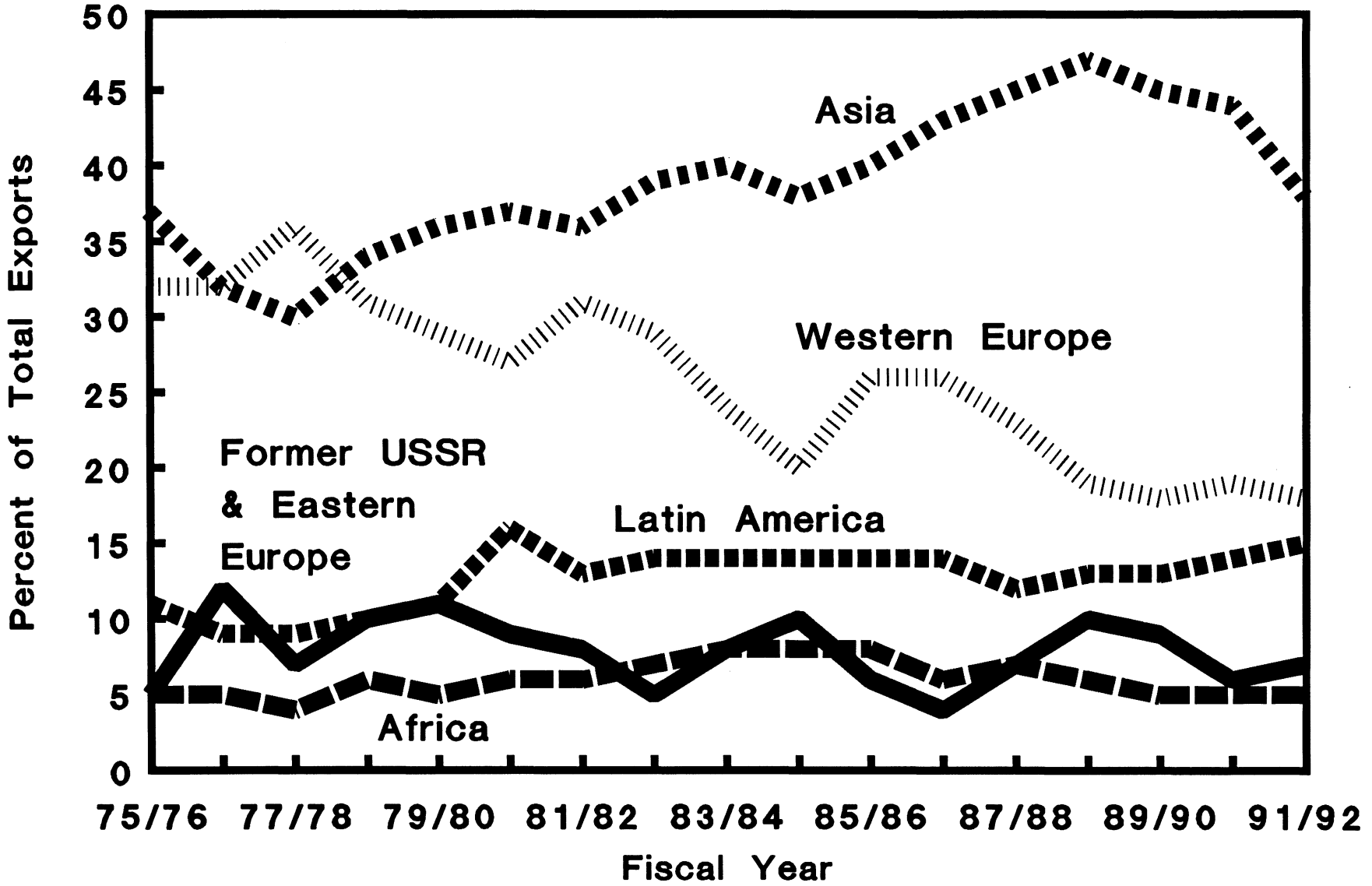


U.S. AGRICULTURAL EXPORTS BY WORLD REGION, 1975/76 - 1991/92



MAJOR U.S. EXPORT MARKETS - 1991/92

	Billion Dollars	% Total
Asia	17.4	42
Japan	8.2	20
South Korea	2.2	5
Taiwan	1.9	5
China	.9	2
Western Europe	7.6	18
Latin America	6.4	15
Mexico	3.4	9
Canada	4.8	12
Former USSR	2.7	7
Africa	2.2	5
World	41.5	100

MAJOR U.S. EXPORT MARKETS - 1991/92

	Billion Dollars	% Total
Japan	8.2	20
Canada	4.8	12
Mexico	3.7	9
Former USSR	2.7	6
Korea	2.2	5
	21.6	52

OHIO FARM EXPORTS - 1990/91

	$ Millions	Percent	Rank Among States
Feed Grains and Products	340	33	7
Soybeans and Products	328	32	5
Wheat and Products	97	10	-
Tobacco	14	1	10
Vegetables and Products	51	5	-
Animals and Products	42	4	-
Poultry and Products	20	2	-
Dairy Products	8	1	8
Feeds and Fodder	28	3	-
Other	89	9	-
Total	1,017	100	10

WORLD ECONOMIC GROWTH

	Percent Change in GDP		
	1991	1992	1993
Former Centrally Planned Economies	-9.7	-16.8	-4.5
Developing Countries	3.2	6.2	6.2
Industrial Countries	0.6	1.7	2.9
Japan	4.4	2.0	3.8
Germany	0.9	1.8	2.6
United States	-1.2	1.9	3.1

WORLD AND REGIONAL TRADE AGREEMENTS

GATT - General Agreement on Tariffs and Trade

EC
- EFTA
- Eastern Europe
- Baltics
- Ukraine

Enterprise for the Americas Initiative
- U.S. - Canada FTA
- NAFTA
- CARICOM
- CBI
- MERCOSUR

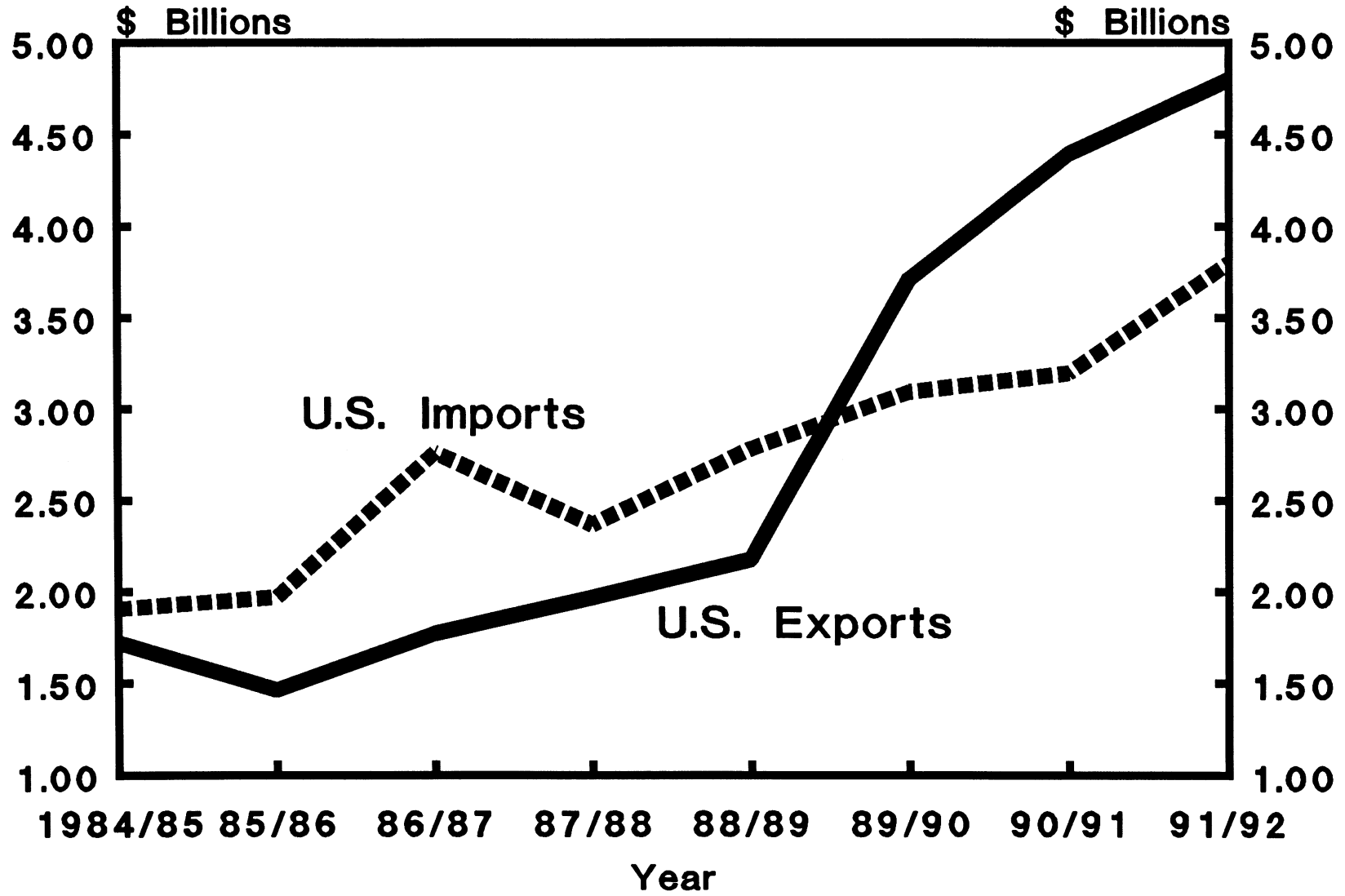
NAFTA COUNTRY CHARACTERISTICS

	United States	Mexico	Canada
Border (miles)	-	2000	4000 (+1500 Alaska)
Population (millions)	254	90	27
GNP/capita	$22,000	$2,500	$20,000
Consumption/capita (tons cereal equiv.)	2.2	1.0	2.0
Arable Land/capita (acres)	1.8	0.6	4.2
Grain Productivity (tons/acre)	2.0	1.1	1.1

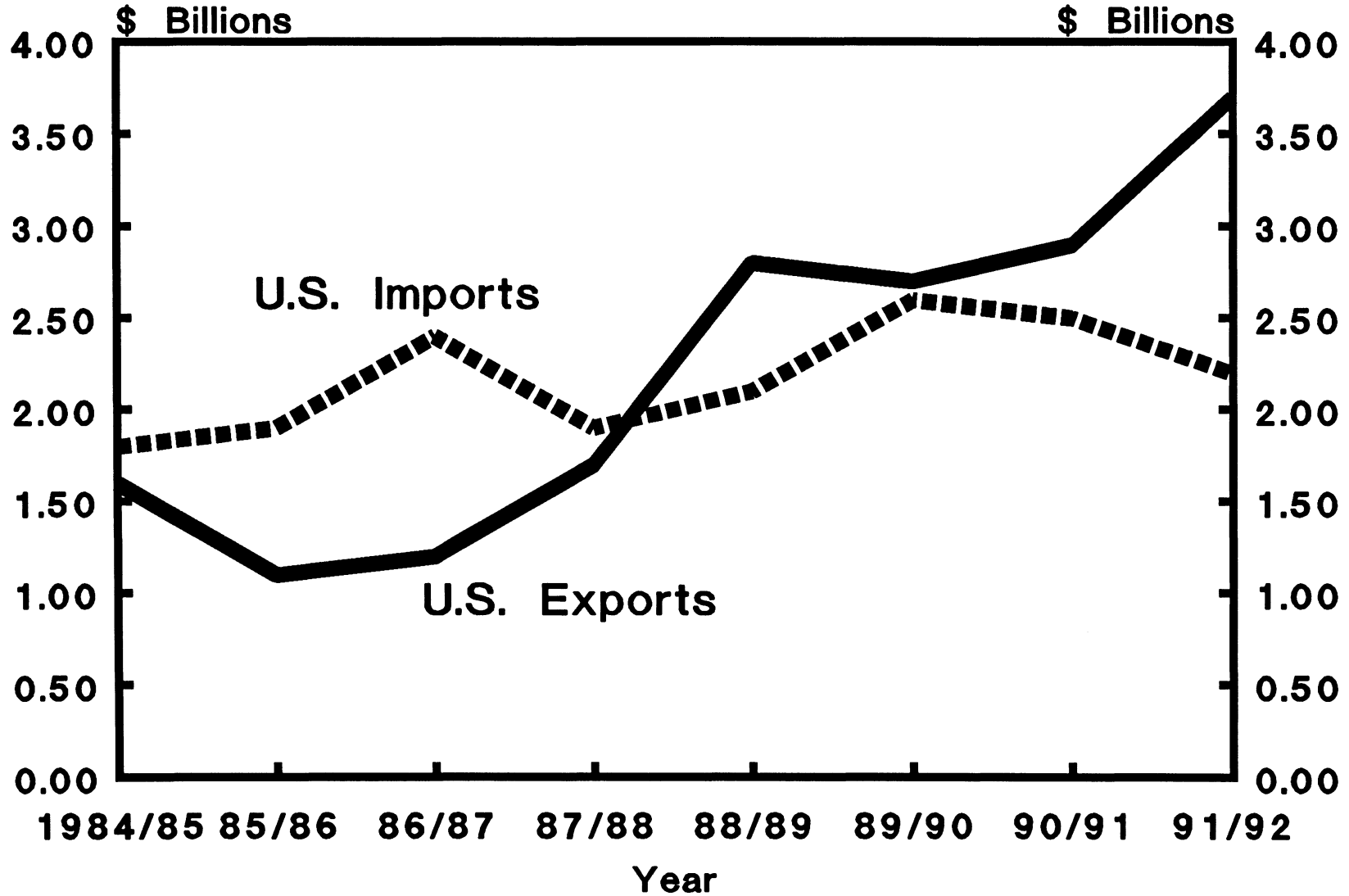
NAFTA: NON-AGRICULTURAL CONDITIONS

	United States	Mexico
Import Tariffs on Manufactured Goods	4%	10%
Hourly Wage Costs	$15.45	$2.17
Gross Domestic Product (GDP)	$4,900 bil.	$209 bil.

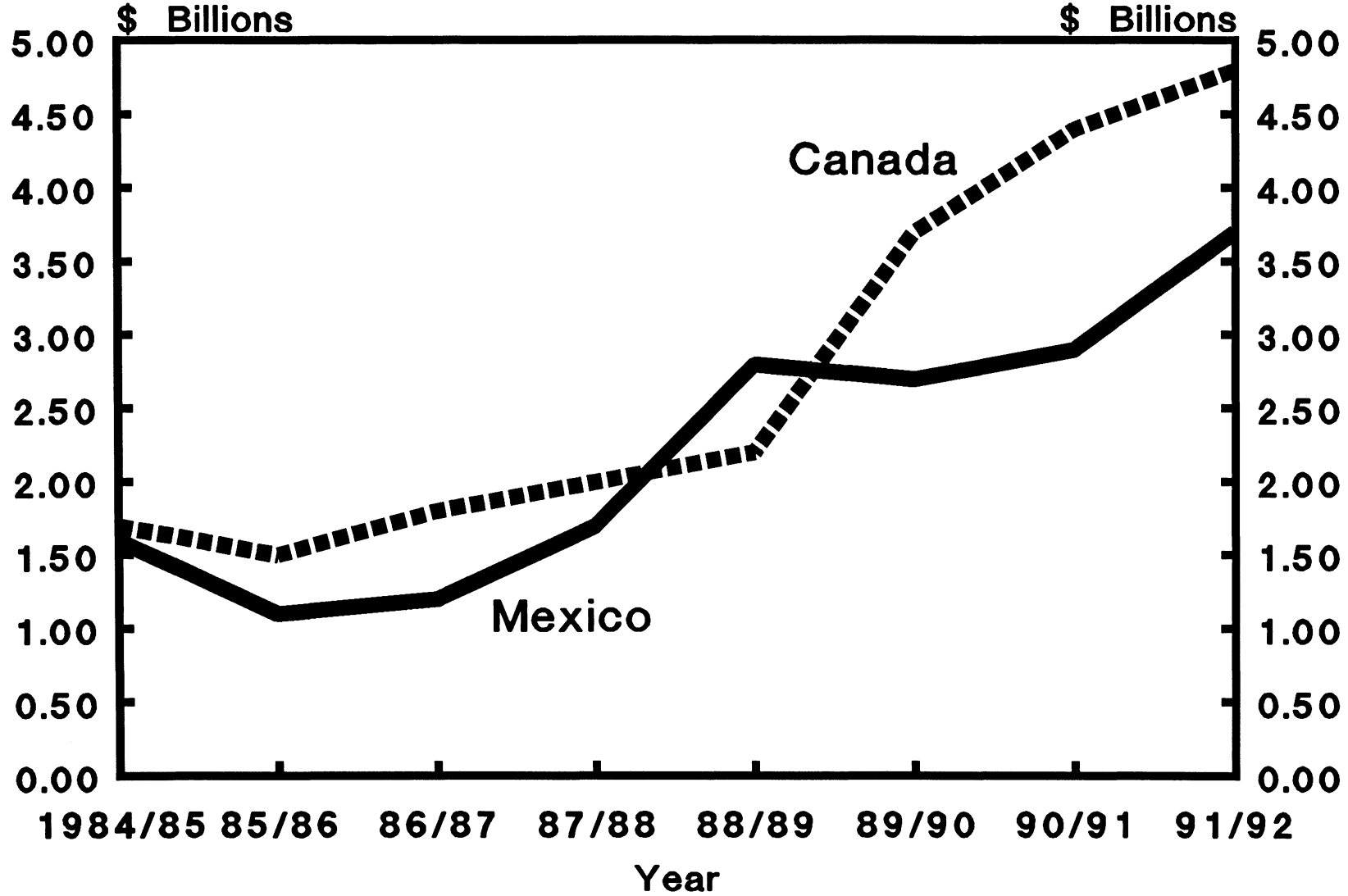
U.S. - CANADA AGRICULTURAL TRADE



U.S. - MEXICO AGRICULTURAL TRADE



U.S. AGRICULTURAL EXPORTS TO MEXICO AND CANADA



U.S. NORTH AMERICAN AGRICULTURAL TRADE MARKET, 1991/92

	Canada		Mexico	
	Exports To	Imports From	Exports To	Imports From
Trade value (Bil. $)	$ 4.8	$ 3.8	$ 3.7	$ 2.2
Trade composition (%)				
Livestock	19	45	37	17
Grains	13	18	29	2
Oilseeds	7	8	16	2
Horticulture	57	23	6	73
Other	4	6	12	6

NAFTA: PROJECTED CHANGES IN U.S. EXPORTS TO MEXICO AFTER 15 YEARS - NAFTA VERSUS NO NAFTA

Commodity	Export Changes	Added Annual Revenues (million dollars)
Wheat	+40%	30
Corn	+50%	400-450
Soybeans	+20%	400-500
Pork	+100%	150-200
Beef		200-400

1990 CLEAN AIR ACT

Two New Fuels

Oxygenated Gasoline - 1992

- 43 CO non-attainment areas

Reformulated Gasoline - 1995

- 9 ozone pollution areas
  - 25% of gasoline
- plus opt-in areas
  - additional 25% potential

Role of Ethanol - ?

ETHANOL: ELECTION YEAR INITIATIVES

Bush on Reformulated Gasoline

- refiners must produce low volatility gasolines for ethanol blending
  - 30% of gasoline in 5 cities
  - up to 20% in 4 cities

Madigan on Ethanol Research

- $10 million in FY '93
- $100 million over five years

Potential Problem

- 30% may face legal challenge
- $100 million needs congressional action

ETHANOL PRODUCTION AND CAPACITY

	Distillaries (Number)	Capacity (bil. gal.)	Annual Production (bil. gal.)	Corn (mil. bu.)
1980's	36	1.00	.85	340
1991	36	1.16	1.00	400
1992	36	1.16	1.06	423
1994?	(60)	1.80	1.8 - 2.0	720 - 800